

WHAT IS CLAIMED IS:

1. An ink set comprising a water-based ink containing a coloring material in a state dissolved or dispersed in an aqueous medium and a water-based
5 reactive liquid containing a first component for insolubilizing or aggregating the coloring material in the ink by mixing with the water-based ink,
wherein the water-based reactive liquid contains a water-soluble high-molecular compound in a
10 state dissolved therein, the water-based ink contains a second component, which is not insolubilized by the first component and the coloring material, in a state dissolved therein, and the water-soluble high-molecular compound is not insolubilized by the first
15 component and the coloring material but insolubilized by the second component.
2. The ink set according to claim 1, wherein the first component is a cationic substance.
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3. The ink set according to claim 1, wherein the first component contains at least one selected from polyvalent metal ions and salts thereof.
- 25 4. The ink set according to claim 3, wherein the polyvalent metal is at least one selected from Ca, Cu, Ni, Mg, Zn, Ba, Al, Fe, Cr and Y.

5. The ink set according to claim 1, wherein the coloring material in the ink contains either an anionic dye or a pigment having a surface to which an anionic group is chemically bonded.

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6. The ink set according to claim 1, wherein the ink contains a pigment as the coloring material and additionally an anionic dispersing agent.

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7. The ink set according to claim 1, wherein the second component is such that causes the water-soluble high-molecular compound to gel or crosslink.

8. The ink set according to claim 1, wherein
15 the water-soluble high-molecular compound has a hydroxyl group.

9. The ink set according to claim 8, wherein
the water-soluble high-molecular compound is
20 polyvinyl alcohol.

10. The ink set according to claim 9, wherein the second component is boric acid or a salt thereof.

25 11. The ink set according to claim 1, wherein the water-soluble high-molecular compound has an acetoacetyl group.

12. The ink set according to claim 11, wherein the second component is adipic dihydrazide.

13. A process for forming an image on a
5 recording medium, comprising the steps of:

(i) applying the water-based ink making up the ink set according to any one of claims 1 to 12 to a recording medium by an ink-jet recording method; and

(ii) applying the water-based reactive liquid
10 making up the ink set according to any one of claims 1 to 12 to the recording medium,

wherein the step (ii) is conducted prior to the step (i) in such a manner that the water-base ink comes into contact with the water-based reactive
15 liquid on the recording medium.

14. The image forming process according to claim 13, wherein the step (ii) is conducted to an area wider than an area of the recording medium, to
20 which the ink is applied in the step (i).

15. A water-based ink suitable for use in conducting ink-jet recording on a recording medium, to which a water-based reactive liquid containing a
25 water-soluble high-molecular compound and a first component for insolubilizing or aggregating a coloring material has been applied,

wherein the ink contains the coloring material in a state dissolved or dispersed in an aqueous medium and has a second component for insolubilizing the water-soluble high-molecular compound.